

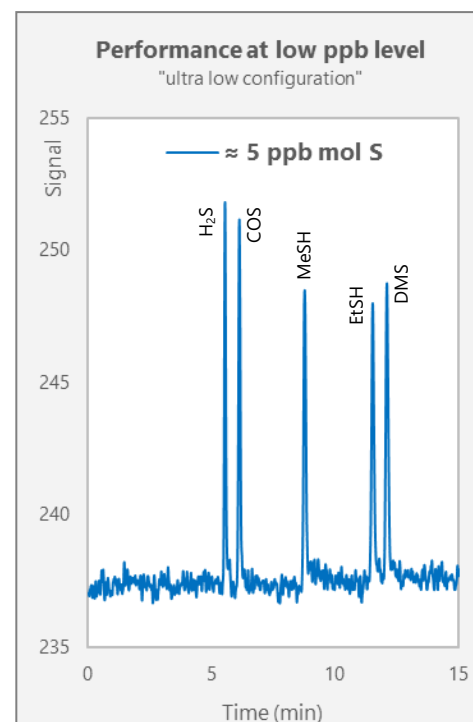
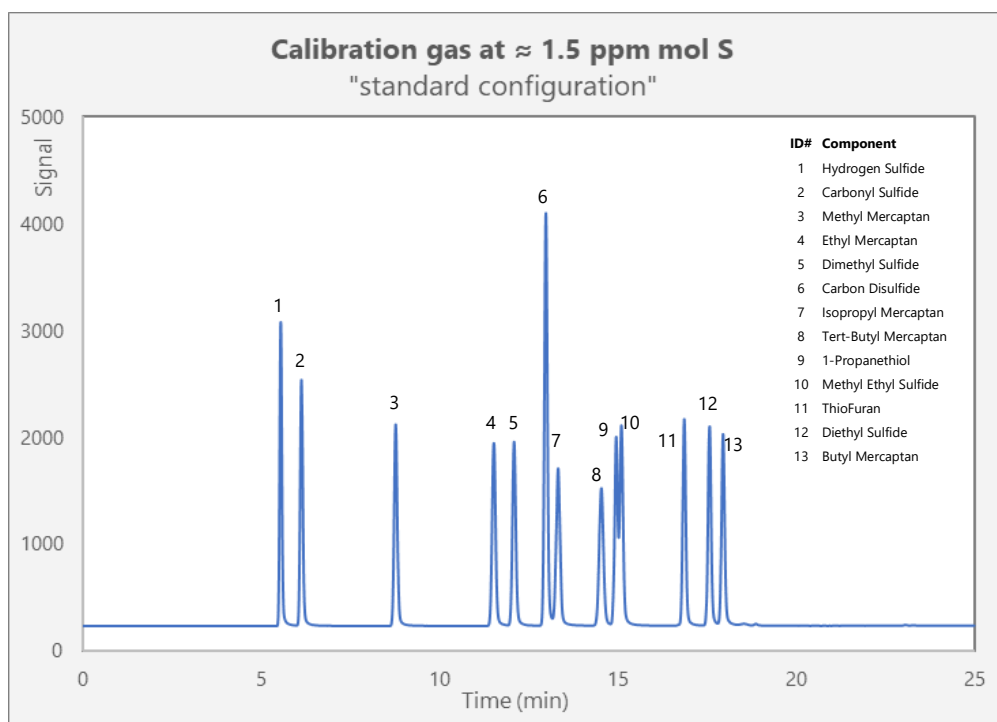
Sulfur compounds in Natural Gas and Gaseous Fuels by GC-SCD according to ASTM D5504

Test method ASTM D5504 covers the determination of speciated volatile sulfur-containing compounds in high methane content gaseous fuels such as natural gas, using gas chromatography and sulfur selective detection. The test method is applicable to the determination of individual sulfur species at levels of 0.01 to 1000 mg/m³ (as sulfur).

This application highlight shows the performance of the "**AC D5504 applications**" using the SeNSE². This analyzer is available in two configurations:

1. **Ultra-low:** direct gas sample introduction without split inlet, to achieve the best possible limit of detection. PAC has been able to achieve as low as 5 ppb mol S.
2. **Standard:** gas sample introduction with split inlet to allow for flexibility with wide concentration ranges.

Both configurations use a 60m methyl silicone capillary column to provide adequate separate the components of interest.



Repeatability (based on 5 runs on standard configuration)			
Component	Area	STDEV	RSD
Hydrogensulfide	324	4.23	1.3
Carbonylsulfide	367	2.31	0.6
Methylmercaptan	372	6.34	1.7
Ethyl mercaptan	354	2.57	0.7
Dimethylsulfide	348	5.43	1.6

Conclusion:

These analyzers, according to ASTM D5504, with the SeNSE² detector are configured to achieve the lowest possible detection limit or provide flexibility in the measuring range:

Analyzer specifications		
	ultra-low configuration	standard configuration
Limit of Detection ppm mol S	0.01	0.1
Working range ppm mol S	0.01 - 1	0.1 - 1000
Detector sensitivity	<0.15 pg S / sec (with oxygen as oxidant)	

The SeNSE² chemiluminescence detector has an excellent sensitivity, long-term stability and equimolarity. Its great performance, and as part of AC by PAC factory-tested and performance-guaranteed analyzer, makes it a highly reliable detector to specifically identify and quantify individual sulfur components at very low ppb level. This meets the needs of the industry for measuring individual sulfur compounds at very low levels in various types of gases, such as natural gas, fuel gases & hydrogen.